Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (previously presented) An isolated or recombinant nucleic acid encoding menin, wherein said nucleic acid encodes a protein comprising an amino acid sequence having at least 95% identity to SEQ ID NO:2.

2. (cancelled)

3. (currently amended) The isolated or recombinant nucleic acid of claim 1 ~~2~~, wherein the ~~non-coding~~ sequence comprises ~~introns~~ the coding region of SEQ ID NO:1.

4. (currently amended) The isolated or recombinant nucleic acid of claim 1 ~~3~~, wherein the sequence comprises SEQ ID NO:3.

5. (previously presented) The isolated or recombinant nucleic acid of claim 1, wherein the nucleic acid sequence encodes a protein having the sequence set forth in SEQ ID NO:2.

6.-18. (cancelled)

19. (currently amended) A method for detecting in a test sample the presence or absence of a mutation in a human MEN1 gene comprising a nucleotide sequence that encodes a human menin as set forth in SEQ ID NO:2, or the presence or absence of ~~a~~ the MEN1 ~~allele~~ gene, the method comprising:

a) contacting said test sample ~~suspected of missing a MEN1 allele or encoding a mutant form of the human menin~~ with a first oligonucleotide having a sequence that discriminates between ~~the~~ a wild type gene and the missing allele or mutant form; and,

b) detecting the formation of a duplex between the gene and the first oligonucleotide sequence.

20. (previously presented) A method of claim 19, wherein the first oligonucleotide is unable to bind to the wild-type MEN1 gene under hybridization conditions in which the first oligonucleotide binds to the mutant sequence of MEN1.

21. (original) A method of claim 19, wherein the contacting step further comprises amplifying a portion of the human MEN1 gene and where the first nucleic acid is a polymerase chain reaction amplification primer which binds to an intron of MEN1.

22. (original) A method of claim 19, wherein the contacting step further comprises amplifying a portion of MEN1 and where the first nucleic acid is a polymerase chain reaction amplification primer which discriminates between wild-type and mutant forms of MEN1 using allelic specific polymerase chain reaction.

23. (original) A method of claim 19, wherein the first nucleic acid binds to either exons or introns of the genomic DNA encoding the human menin gene.

24. (previously presented) A kit for detecting in a test sample the presence or absence of a mutation in a MEN1 gene comprising a nucleotide sequence encoding a menin polypeptide as set forth in SEQ ID NO:2, the kit comprising;

a) a container holding a first oligonucleotide sequence that discriminates between the wild type gene and the mutant form; and

b) a container holding a reagent for detecting the formation of a duplex between the gene and the first nucleotide sequence.

25. (cancelled)

26. (previously presented) The kit of claim 24, further comprising amplification primer pairs specifically binding to a human genomic DNA sequence encoding menin.

27.-29. (cancelled)

30. (currently amended) A transfected cell *in vitro*, wherein the cell comprises ~~comprising~~ a heterologous nucleic acid of claim 1.

31. (cancelled)

32. (currently amended) The transfected cell of claim 30, wherein the heterologous ~~or exogenous~~ nucleic acid comprises a nucleic acid as set forth in SEQ ID NO:1 or SEQ ID NO:3.

33. (previously presented) The transfected cell of claim 30, wherein the cell is a human cell.

34. (withdrawn) An organism into which an exogenous nucleic acid sequence has been introduced, the exogenous nucleic acid specifically hybridizing under stringent conditions to a nucleic acid with:

a sequence as set forth in SEQ ID NO:1; or,

a nucleic acid encoding a protein defined as having a calculated molecular weight of about 67.5 kDa; and (a) specifically binding to an antibody raised against an protein with a sequence as set forth in SEQ ID NO:2; or (b) having at least 60% amino acid sequence identity to a protein with a sequence as set forth in SEQ ID NO:2; and,

the organism expresses the exogenous nucleic acid as a menin protein.

35. (withdrawn) The organism of claim 34, wherein the exogenous nucleic acid comprises the nucleic acid as set forth in SEQ ID NO:1 or SEQ ID NO:3.

36. (previously presented) An expression cassette comprising a nucleic acid of claim 1, wherein the nucleic acid is operably linked to a promoter.

37. (original) The expression cassette of claim 36, further comprising an expression vector.

38.-42. (cancelled)